

WHAT IS CLAIMED IS:

1 1. A system for identifying a scrambling code from signals received from
2 a base station, comprising:

3 a scrambling code generator configured to generate a master scrambling code;
4 control logic configured to generate a plurality of individual scrambling codes
5 based on the master scrambling code, the plurality of individual scrambling codes being
6 sequential and any two adjacent individual scrambling codes having a predetermined chip
7 offset; and

8 a plurality of correlators configured to perform correlations and generate
9 correlation results, each correlator configured to correlate the received signals with a
10 corresponding one of the plurality of individual scrambling codes and generate corresponding
11 correlation results, the plurality of correlators performing their correlations in a parallel
12 manner.

1 2. The system according to claim 1 wherein the correlation results
2 generated by the plurality of correlators are evaluated to identify the scrambling code from
3 the received signals thereby allowing the identity of the base station which transmitted the
4 received signals to be identified.

1 3. The system according to claim 1 wherein the plurality of correlators
2 perform their correlations in a real-time manner.

1 4. A mobile terminal incorporating the system as recited in claim 1.

1 5. The system according to claim 1 wherein the base station is located in
2 a W-CDMA communication network.

1 6. A system for identifying a scrambling code from signals received from
2 a base station, the base station belonging to one of a plurality of base station groups in a
3 communication network, the system comprising:

4 a scrambling code generator configured to generate a master scrambling code;
5 control logic configured to generate a plurality of individual scrambling codes
6 based on the master scrambling code, the plurality of individual scrambling codes being
7 sequential and any two adjacent individual scrambling codes having a predetermined chip
8 offset; and

9. A plurality of correlators configured to perform correlations and generate
10 correlation results, each correlator configured to correlate the received signals with a
11 correlation results, one of the plurality of individual scrambling codes and generate corresponding
12 correlation results, the plurality of correlators performing their correlations in a parallel
13 manner.
1. The system according to claim 6 wherein the master scrambling code
2 has a period determined by a correlation length and a predetermined group chip
3 offset is determined by number of base stations within a base station group and the
4 offset is determined by number of base stations within a base station group and the
5 offset is determined by a predetermined chip offset.
1. The system according to claim 6 wherein the plurality of correlators
2 perform their correlations in a real-time manner.
1. A mobile terminal incorporating the system as recited in claim 6.
2. A method for identifying a scrambling code from signals received from
3 a base station, comprising:
4 generating a master scrambling code;
5 generating a plurality of individual scrambling codes, wherein the plurality of
6 individual scrambling codes are separated by a predetermined chip offset; and
7 correlating the received signals with each of the plurality of individual scrambling codes
8 in a parallel manner and generating correlation results therefor.
9. The method of claim 12 further comprising:
10 evaluating the correlation results to identify the scrambling code from the
11 received signals thereby allowing the identity of the base station which transmitted the
12 received signals to be identified.

1 14. The method of claim 12 wherein the base station belongs to one of a
2 plurality of base station groups in a communication network and the step of generating the
3 master scrambling code further comprises:

4 selecting a correlation length; and

5 generating the master scrambling code using the selected correlation length
6 and a predetermined group chip offset.

1 15. The method of claim 14 wherein the predetermined group chip offset is
2 determined by number of base stations within a base station group and the predetermined
3 chip offset.

1 16. The method of claim 12 wherein the correlations are performed in a
2 real-time manner.

1 17. A mobile terminal utilizing the method as recited in claim 12.

1 18. The method according to claim 12 wherein the base station is located
2 in a W-CDMA communication network.

1 19. A system for identifying a scrambling code from signals received from
2 a base station, comprising:

3 means for generating a master scrambling code;

4 means for generating a plurality of individual scrambling codes, wherein the
5 plurality of individual scrambling codes are sequential and any two adjacent individual
6 scrambling codes are separated by a predetermined chip offset; and

7 means for correlating the received signals with each of the plurality of
8 individual scrambling codes in a parallel manner and generating correlation results therefor.

1 20. The system according to claim 19 further comprising:

2 means for evaluating the correlation results to identify the scrambling code
3 from the received signals thereby allowing the identity of the base station which transmitted
4 the received signals to be identified.

1 21. The system of claim 19 wherein the means for correlating performs its
2 correlations in a real-time manner.

- 1 22. A mobile terminal utilizing the system as recited in claim 19.
- 1 23. The system according to claim 19 wherein the base station is located in
- 2 a W-CDMA communication network.